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ROAD LOGS – STAUNTON, CHURCHVILLE, GREENVILLE, AND STUARTS DRAFT QUADRANGLES

Eugene K. Rader [1]

Editor's note: The following road log serves as a guide to important geologic features that can be seen along or near highways in the area studied. Distances between points of interest, as well as cumulative mileage, are shown, and the stops are places where features such as formational contacts, structures, fossils, and interesting rock types or minerals may be observed.

This log was prepared in conjunction with a report on the geology of the Staunton, Churchville, Greenville, and Stuarts Draft quadrangles published as Report of Investigations 12 by the Virginia Division of Mineral Resources. This publication, which is accompanied by four geologic maps in color at a scale of 1:24,000, is available at a cost of $4.25 per copy plus 4 percent sales tax. An abstract of the report was printed in the August 1967 issue (vol. 13, no. 3, p. 27-28) of Virginia Minerals.

PART ONE

Starting point—on U. S. Highway 250 at the bridge over Christians Creek, east of Brand.

Cumulative Mileage	*Distance*	*Explanation*
0.0	0.0	Proceed northwest on U. S. Highway 250.
0.3	0.3	*STOP 1.* Martinsburg Formation is well exposed in roadcuts along the north side of the road. Here the incompetent nature of the formation is well displayed. Continue northwest on U. S. Highway 250.
1.7	1.4	*STOP 2.* Martinsburg-Edinburg contact zone is fairly well exposed near Peyton on the south side of the highway. Continue northwest on U. S. Highway 250.
1.9	0.2	Note Mary Gray and Betsy Bell, conical hills of Beekmantown chert.
4.0	2.1	Junction of U. S. Highways 250 and 11. Turn right (north) on U. S. Highway 11 (Commerce Road).

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Cumulative Mileage	*Distance*	*Explanation*
4.7	0.7	*STOP 3.* Junction of U. S. Highway 11 and State Highway 254. Graptolites are abundant in the dark Edinburg shale at the intersection. Continue north on U. S. Highway 11.
6.8	2.1	*STOP 4.* A large nepheline syenite dike is exposed 100 yards north of the junction of U. S. Highways 11 and 11-A in the roadcut on the east side of the highway. Note that the dike does not cross the railway which parallels U. S. Highway 11 but does cross the highway. Continue north on U. S. Highway 11.
7.3	0.5	Note low linear ridge to the west. These ridges are underlain by the cherty portion of the Lincolnshire Formation.
9.8	2.5	Junction of U. S. Highway 11 and State Road 781, just north of bridge over Middle River. Turn left on State Road 781 and continue to Bowling quarry.
10.0	0.2	*STOP 5.* Bowling quarry. Upper Beekmantown, New Market, and Lincolnshire formations are well exposed. Fossils in the Lincolnshire are silicified. Turn around and return to U. S. Highway 11 via State Road 781.
10.2	0.2	Junction of State Road 781 and U. S. Highway 11. Turn right on U. S. Highway 11.
10.8	0.6	Junction of U. S. Highway 11 and State Road 612 in Verona. Turn right on State Road 612.
11.7	0.9	*STOP 6.* Park in front of house on left side of road, cross road, and walk across field to gully. The Chepultepec is well exposed here. Note the black chert nodules, calcarenite filling, and fossils. Continue northwest on State Road 612.
12.2	0.5	Junction of State Roads 612 and 626; turn right. Then turn left and stay on State Road 612.
12.4	0.2	Note Pulaski-Staunton fault zone.

Figure 1. Teschenite dike (darker rock) trending northwestward.

Cumulative Mileage	Distance	Explanation
14.1	1.7	Junction of State Roads 612 and 613. Turn right on State Road 613.
16.3	2.2	Junction of State Roads 613 and 742. Turn right on State Road 742.
16.7	0.4	*STOP 7*. Park past barn. Three alkalic dikes are exposed here. A nepheline syenite dike is exposed near the small bridge. A dike composed of teschenite and a large nepheline syenite dike are exposed on the slope to the west. Across the creek to the east the teschenite and large nepheline syenite dikes intersect on the slope near the trees. Continue on State Road 742 to the bridge over Middle River and turn around. Return to State Road 613 via State Road 742. (See Figure 1.)
18.8	2.1	Turn right on State Road 613.
19.3	0.5	Junction of State Roads 613 and 742. Turn left on State Road 742.
22.5	3.2	Junction of State Roads 742 and 728. Turn right on State Road 728.
23.3	0.8	*STOP 8*. Augusta Stone Corp. quarry. Park near office and get permission to enter quarry. The Edinburg in the quarry is gently folded and cut by a reverse fault on the east side. Continue northwest on State Road 728.
24.0	0.7	Junction of State Roads 728 and 732. Turn right, cross bridge, and turn left on State Road 728.
24.6	0.6	*STOP 9*. Abandoned quarry in the upper Beekmantown and New Market. Note folding, cave deposits, and collapse breccia. Calcite is abundant in the quarry. Turn around and return to State Road 732 via State Road 728.
25.1	0.5	Junction of State Roads 728 and 732; turn right on State Road 732.
26.1	1.0	Note Edinburg exposed along road.
27.1	1.0	Junction of State Road 732 and U. S. Highway 250. Turn left on U. S. Highway 250.
27.6	0.5	State Road 612 enters U. S. Highway 250 from the southwest. Park near the junction. *STOP 10*. The Lincolnshire and New Market are well exposed on the northeast side of U. S. Highway 250. Note the reddish mudstone at the base of the New Market. Proceed southwest on State Road 612.
30.6	3.0	Junction of State Road 612 and State Highway 254. Turn right on State Highway 254.
34.5	3.9	*STOP 11*. Abandoned quarry in the Beekmantown Formation. The quarry is in the footwall of the North Mountain fault. A small anticline and a fault east of the fold are exposed. Continue west on State Highway 254.
36.5	2.0	Junction of State Highway 254 and State Road 703. Turn left on State Road 703.
36.8	0.3	Junction of State Roads 703 and 705. Turn right on State Road 705.
37.7	0.9	Junction of State Roads 705 and 698. Turn right on State Road 698 and park. *STOP 12*. Fossiliferous beds in the Martinsburg Formation are exposed in the low cut on the south side of the road. Turn around and return to State Road 705; turn left.
38.5	0.8	*STOP 13*. Park along Chesapeake and Ohio Railway track. Walk northwestward along track to Buffalo Gap. The section exposed here includes units from Martinsburg to the lower part of the Licking Creek Limestone. Note the overturning, the Oswego-like beds in the upper Martinsburg, the ripple-marked beds of the Keefer, and the folding in the Upper Silurian and Lower Devonian. Return to cars. Return to State Highway 254 via State Roads 705 and 703. (See Figures 2 and 3.)

Cumulative Mileage	*Distance*	*Explanation*
38.9	0.4	Turn left on State Highway 254.
39.7	0.8	Junction of State Highway 254 and State Road 688. Turn right on State Road 688.
40.4	0.7	*STOP 14.* Fossiliferous beds in the lower part of the Chemung Formation exposed in curve. Turn around and return to State Highway 254 via State Road 688.
41.1	0.7	Turn left on State Highway 254.

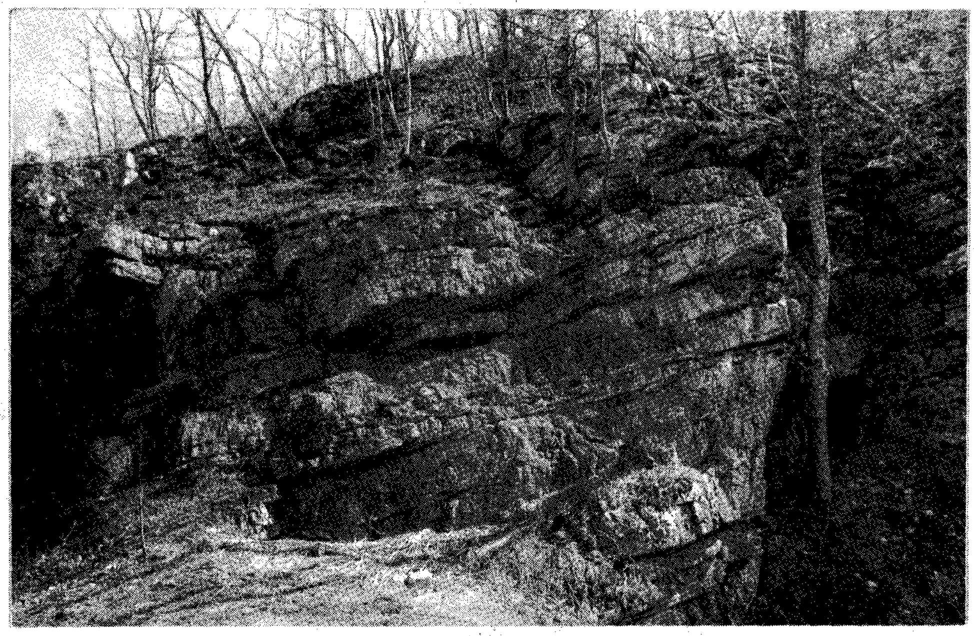

Figure 2. Overturned beds of Tuscarora quartzite.

Figure 3. Ripple-marked Keefer Sandstone. Three directions of ripple marks are present on the overturned beds.

Cumulative Mileage	*Distance*	*Explanation*
41.9	0.8	Junction of State Highways 254 and 42. Turn left on State Highway 42.
44.3	2.4	Junction of State Highway 42 and State Road 720. Turn left on State Road 720.
44.8	0.5	Junction of State Roads 720 and 723. Turn right on State Road 723.
45.0	0.2	Note the decrease in elevation of Little North Mountain.
45.2	0.2	Junction of State Roads 723 and 724. Turn left on State Road 724.
45.8	0.6	Junction of State Roads 724 and 720. Turn right on State Road 720.
46.7	0.9	Note elevation of Little North Mountain.
47.4	0.7	*STOP 15*. Cross creek and park; walk northwestward along trail to gap. Here the Martinsburg is thrust over the upper part of the Cacapon. *STOP 16*. Walk eastward to farmhouse and get permission to look at outcrops in back of house. Here the Edinburg is exposed beneath the North Mountain fault. Return to cars and proceed via State Road 720 to Lone Fountain.
48.7	1.3	Junction of State Road 720 and U. S. Highway 250. Turn right on U. S. Highway 250.
57.0	8.3	*STOP 17*. Along U. S. Highway 250, across from Gypsy Hill Park. Here the upper megabreccia and crush conglomerate in the Pulaski-Staunton fault zone are well exposed. End of trip.

PART TWO

Starting point—intersection of U. S. Highway 340 and State Road 608 at caution light in Stuarts Draft.

0.0	0.0	Travel south on State Road 608.
1.2	1.2	Note the alluvial deposits along South River.
1.5	0.3	Continue right (west) on State Road 608 at intersection of State Roads 608 and 610.
2.0	0.5	Note Blue Ridge terrace to south. State Road 608 continues on terrace.
3.7	1.7	Turn right on State Road 656 at intersection of State Roads 608 and 656.
4.3	0.6	Note the alluvial deposits along South River.
4.4	0.1	Junction of State Roads 656 and 657. Continue right on State Road 657.
5.0	0.6	Junction of U. S. Highway 340 and State Road 657. Turn left on U. S. Highway 340.
7.1	2.1	*STOP 1*. New Market Limestone exposed in roadcut. Here the New Market is thick and probably was deposited in a depression on the Beekmantown surface. Continue west on U. S. Highway 340.
10.5	3.4	Junction of U. S. Highways 11 and 340. Turn left (south) on U. S. Highway 11 toward Greenville.
11.9	1.4	Junction of U. S. Highway 11 and State Road 662 in Greenville. Turn right (west) on State Road 662.
13.5	1.6	*STOP 2*. Junction of State Roads 662 and 604. Conococheague-Elbrook contact. Note oolitic chert near base of the Conococheague. Continue west on State Road 662.

Cumulative Mileage	*Distance*	*Explanation*
14.6	1.1	*STOP 3.* Overturned syncline of Lincolnshire and New Market. The east limb is overridden by the Pulaski-Staunton fault. Continue west on State Road 662.
16.2	1.6	Junction of State Roads 662 and 693. Turn left on State Road 693. Note linear ridge of Conococheague sandstone to the northwest.
16.6	0.4	Junction of State Roads 693 and 670. Turn left on State Road 670 and continue to the southwest.
18.1	1.5	*STOP 4.* Allen bauxite mine (county dump) on northwest side of State Road 670. Turn around and proceed north on State Road 670.
18.4	0.3	Junction of State Roads 670 and 674. Turn right on State Road 674.
19.8	1.4	*STOP 5.* Pulaski-Staunton fault breccia. Crush conglomerate and upper megabreccia exposed on slope north of road. Continue southeast on State Road 674.
20.4	0.6	Junction of State Roads 674 and 604. Turn left on State Road 604 and continue north.
23.7	3.3	Junction of State Roads 604 and 817. Turn left on State Road 817.
24.3	0.6	*STOP 6.* Folding in the Elbrook near the Pulaski-Staunton fault. Continue on State Road 817.
26.1	1.8	Junction of State Roads 817 and 701. Turn left on State Road 701.
26.5	0.4	Note outcrops of Chepultepec to the south.
28.2	1.7	Junction of State Road 701 and State Highway 252. Turn left on State Highway 252 and continue through Middlebrook.
30.5	2.3	Junction of State Road 603 and State Highway 252. Turn right on State Road 603.
31.6	1.1	*STOP 7.* Rome shale and dolomite. Shale is exposed in the roadcut; dolomite is exposed on the tree-covered slope north of the road and west of the curve. Return to Middlebrook.

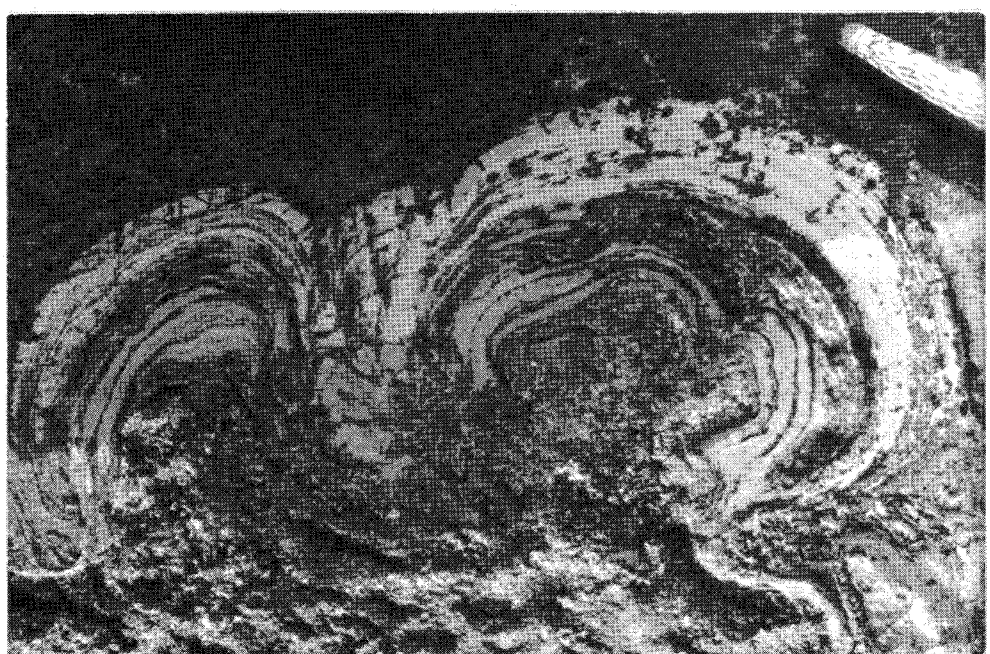

Figure 4. Algal structures in the lower part of the Conococheague Formation.

Cumulative Mileage	*Distance*	*Explanation*
32.9	1.3	Junction of State Road 603 and State Highway 252; turn left on State Highway 252 and go to Middlebrook.
33.7	0.8	In Middlebrook turn left on State Road 876.
35.4	1.7	Junction of State Roads 876 and 712. Turn right on State Road 712 and continue to end of State maintenance.
37.1	1.7	*STOP 8.* Stop at brick house and ask for permission to look at the rocks north of the house. Algal structures in the lower part of the Conococheague. Turn around and return to State Road 876 via State Road 712. (See Figure 4.)
38.8	1.7	Turn right on State Road 876 and continue to the junction with State Road 713.
41.9	3.1	*STOP 9.* Junction of State Roads 876 and 713. Lantz Mills facies of the Edinburg Formation in the field north of the junction. Continue north on State Road 876.
42.7	0.8	Junction of State Roads 876 and 841. Turn right on State Road 841.
43.3	0.6	Note outcrops of shaly Elbrook dolomite.
43.8	0.5	Junction of State Roads 841 and 711. Turn right (south) on State Road 711.
44.6	0.8	Junction of State Roads 711 and 694. Turn left on State Road 694.
45.0	0.4	Note Sugarloaf, a conical hill of Beekmantown chert, to the north.
46.9	1.9	Junction of State Road 694 and State Highway 252. Turn right on State Highway 252.
47.2	0.3	Junction of State Highway 252 and State Road 694. Turn left on State Road 694.
49.0	1.8	Junction of State Roads 694 and 693. Turn left on State Road 693.

Figure 5. Collapse breccia composed of limestone and dolomite of the Conococheague and Chepultepec formations.

Cumulative Mileage	*Distance*	*Explanation*
50.0	1.0	The Chepultepec underlies the small valley west of the road.
50.5	0.5	*STOP 10.* Diabase dike exposed in the roadcut on the east side of the road. The mineralogy of this dike was described by Campbell and Cole in *The Compass* (1961). Continue north on State Road 693.
51.0	0.5	Junction of State Roads 693 and 697. Turn right on State Road 697.
51.3	0.3	*STOP 11.* Brecciation in the Pulaski-Staunton fault zone. Continue east on State Road 697.
52.3	1.0	Junction of State Roads 697 and 613. Turn left on State Road 613.
54.1	1.8	*STOP 12.* Junction of State Roads 613 and 654. Stop on west side of bridge and walk upstream along Folly Mills Creek to waterfall. Here the creek drops about 15 feet over travertine. Turn right on State Road 654 and cross bridge.
54.2	0.1	*STOP 13.* Park at end of bridge and walk east along road. Fault breccia, cave deposits, and collapse breccia are exposed for about 1000 feet across strike. Continue east on State Road 654. (See Figure 5.)
54.8	0.6	Junction of State Road 654 and U. S. Highway 11. Turn right on U. S. Highway 11.
55.2	0.4	Junction of U. S. Highway 11 and State Road 654. Turn left on State Road 654 and park. *STOP 14.* New Market-Beekmantown contact exposed north of State Road 654 in field. A conglomerate marks the unconformable contact. Continue southeast on State Road 654.
58.2	3.0	*STOP 15.* Southwest of the road, on the east side of Christians Creek, the Murat facies of the Lincolnshire Formation is well developed. Continue southeast on State Road 654.
58.3	0.1	Junction of State Roads 654 and 652. Turn left on State Road 652.
60.9	2.6	Junction of State Roads 652 and 608. Turn right on State Road 608.
61.0	0.1	*STOP 16.* Lincolnshire-Edinburg contact is well exposed in the north end of the roadcut. Continue south on State Road 608.
63.1	2.1	Junction of State Road 608 and U. S. Highway 340. End of trip.

NEW PUBLICATIONS

Report of Investigations 10. GEOLOGY OF THE DILLWYN QUADRANGLE, VIRGINIA, by William R. Brown; 77 p., 1 map in color. Price: $2.25 (plus 4 percent State sales tax).

The Dillwyn quadrangle includes a geologically complex area of 237 square miles in the west-central Piedmont of Virginia. It is underlain principally by metasedimentary and metaigneous rock types, most of which are of lower Paleozoic age but some of which are probably Precambrian. The north end of the Farmville basin that contains Triassic boulder conglomerates and arkosic sandstones extends into the southeastern part of the quadrangle, and dikes and sills of probable Triassic age are numerous throughout the area.

The Arvonia syncline with its deep infold of fossiliferous Arvonia slate extends diagonally northeastward through the central part of the quadrangle. This slate contains fossils that have been determined to be of Late Ordovician age. The formation consists mainly of porphyroblastic ("knotted") slate and schist as well as appreciable quartzite, including that at Bremo Bluff, and, in places, a basal conglomeratic schist. The Arvonia Formation is overlain, apparently unconformably, by conglomeratic schist of the Buffards Formation. The base of the Arvonia appears everywhere to be marked by unconformity. Along the west flank of the Arvonia syncline, the Arvonia Formation overlies metasedimentary and metavolcanic rocks of the Evington Group(?); along the east flank south of the James River, it overlies more highly metamorphosed units, in part equivalent to the Evington Group(?), and possibly older rocks that have been raised in the broad Whispering Creek anticline in the south-central part of the quadrangle. To the northeast the Arvonia Formation rests unconformably with basal conglomerate upon gneissic granodiorite and quartz diorite of the Hatcher Complex.

West of the Arvonia syncline, rocks of the Evington Group(?) have been folded in the large overturned Hardware anticline. The metamorphosed plutonic rocks in the vicinity of Diana Mills, chiefly of hornblende diorite composition, are present in the axial portion of this anticline. Most of the quadrangle east of the Arvonia syncline is underlain by the Hatcher Complex, chiefly gneissic quartz diorite that is migmatitically interlayered with hornblende gneiss toward its west and southwest borders. Rocks in the large Whispering Creek anticline in the south-central part of the quadrangle are chiefly metasedimentary biotite gneiss and mica schist, with hornblende gneiss, possibly of igneous origin, mainly about its flanks. These rocks grade without definite contact into the Hatcher Complex to the northeast.

Arvonia slate is the dominant mineral resource of the area. It is split for use in roofing, flagstones, and various architectural applications and is expanded by heating to produce lightweight aggregate. In years past, gold and ores of copper and iron were produced in the area. Kyanite quartzite is of potential value.

Report of Investigations 18. GEOLOGY OF THE WILLIAMSBURG, HOG ISLAND, AND BACONS CASTLE QUADRANGLES, VIRGINIA, by Kenneth F. Bick and Nicholas K. Coch; 28 p., 3 maps in color. Price: $4.00 (plus 4 percent State sales tax).

Sediments in the Williamsburg, Hog Island, and Bacons Castle quadrangles, southeastern Virginia Coastal Plain, range in age from Miocene to Pleistocene. The Miocene St. Marys and Yorktown formations, which are shallow-water marine and littoral deposits, are unconformably overlain by unfossiliferous gravels, sands, silts, and clays. Post-Miocene units are the Pliocene and/or Pleistocene Sedley and Bacons Castle formations, the Pleistocene Windsor and Norfolk formations, and Holocene sediments. The Sedley is of probable fluvial-estuarine origin; the Bacons Castle is fluvial; the Windsor is estuarine-littoral; the Norfolk is fluvial-estuarine; and the Holocene sediments are estuarine. Complex cut-and-fill relationships exist between each of these post-Miocene formations; a complete sequence is nowhere present, and any of the stratigraphic units may locally overlie Miocene formations.

Four dissected plains separated by scarps dominate the morphology. In order of characteristic altitude (and decreasing age) the plains are: 120-foot plain, 90-foot plain, 70-foot plain, and 45-foot plain. The Surry scarp separates the 120-foot and 90-foot plains, and three local scarps separate the 45-foot plain from higher plains; the 90-foot and 70-foot plains are not sharply demarcated. Each plain is the dissected depositional surface of a sedimentary unit. The surface of the Bacons Castle formation forms the 120-foot plain; the Windsor Formation, the 90-foot and 70-foot plains; and the Norfolk Formation, the 45-foot plain.

Following post-Yorktown emergence and erosion, the Sedley and Bacons Castle formations were deposited during two episodes of aggradation which were separated by a period of degradation. Following post-Bacons Castle erosion, the sequence of events was deposition (Windsor Formation), erosion, deposition (Norfolk Formation), erosion, and deposition (Holocene sediments). Maximum relative sea level was + 100 to 110 feet during Windsor deposition and + 45 to 50 feet during Norfolk deposition; these formations are correlated with interglacial stages. A tentative Yarmouth age for the Windsor and Sangamon age for the Norfolk are assigned.

Report of Investigations 19. GEOLOGY OF THE STOKESVILLE AND PARNASSUS QUADRANGLES, VIRGINIA, by Eugene K. Rader; 30 p., 2 maps in color. Price: $2.75 (plus 4 percent State sales tax).

The Stokesville and Parnassus quadrangles are located in the north-central part of Augusta County, west-central Virginia. Bedrock in the area ranges in age from Middle Cambrian to Early Mississippian, but consists principally of Cambrian, Ordovician, and Devonian units. Most of the rocks are sedimentary and have a total stratigraphic thickness of approximately 17,000 feet. Igneous rocks in the area (dikes, plugs, and sills) are of two general compositions, nepheline syenite and teschenite. Generally the dikes are poorly exposed and are less than 50 feet thick.

The Pulaski - Staunton fault transects the southeast part of the area in a northeasterly direction. Northwest of the Pulaski-Staunton fault, on the southeast side of Little North Mountain, is the North Mountain fault. Between these faults, Cambrian and Ordovician formations are folded into a major overturned syncline (Long Glade syncline) and several minor anticlines and synclines. Little North Mountain consists of overturned, steeply dipping Silurian and Devonian rocks. Another thrust fault parallels Little North Mountain on the northwest slope. Northwest of Little North Mountain is the broad West Mountain syncline.

Mineral resources in the area consist of limestone, dolomite, shale, iron ore, sand, and gravel. Limestone and dolomite have been quarried from rocks of Cambrian and Ordovician age for the production of crushed stone and agricultural stone. Shales from the Millboro, Brallier, and Hampshire formations have been tested for potential use in the manufacture of brick and lightweight aggregate. Iron ore has been produced from the lower portion of the Beekmantown Formation. Sand may be obtained from the Tuscarora, Keefer, and Oriskany formations and from the alluvium along North River and Jennings Branch.

Report of Investigations 20. MAGNETIC AND GRAVITY SURVEYS OF ALBEMARLE AND FLUVANNA COUNTIES, VIRGINIA, by Stanley S. Johnson and Palmer C. Sweet; 10 p., 2 maps in color. Price: $3.00 (plus 4 percent State sales tax).

Albemarle and Fluvanna counties are largely in the Piedmont province, with the exception of western Albemarle County which is in the Blue Ridge province. The area is underlain by metamorphosed volcanic, plutonic, and sedimentary rocks of Precambrian to early Paleozoic age and by sedimentary and intrusive igneous rocks of Triassic age. Correlations were generally found to exist between the contoured magnetic and gravity data and recent geologic maps. The unit having the most distinctive magnetic properties is the Catoctin Formation, predominantly a thick series of metamorphosed basaltic lava flows. Gravity values generally decrease westward from eastern Fluvanna County in the central Piedmont to the eastern Blue Ridge in western Albemarle County.

DIRECTORY OF THE MINERAL INDUSTRY IN VIRGINIA—1969, by D. C. Le Van; 41 p. Price: $0.25 (plus 4 percent State sales tax).

This directory lists 236 companies and individuals that were engaged in the production or processing of rock and mineral materials in Virginia, exclusive of coal, as of April 15, 1969. The listing includes portable crushing plants, some captive and intermittent operations, and some processors of out-of-State or imported materials. The names of producers and processors are arranged by county or city under the appropriate raw material or commodity; locations of the various operations are given with respect to a nearby city or town. An alphabetical listing of the names of companies and individuals is provided as a reference index.

A new LIST OF PUBLICATIONS is available from the Division of Mineral Resources. This up-to-date listing of the Division's publications and geologic maps, along with an index, shows the availability of topographic quadrangle maps in Virginia. The LIST OF PUBLICATIONS is available free of charge.

NEWS NOTES

The largest cargo of coal ever loaded into a ship left Norfolk, Virginia, in January 1969. The Norwegian vessel *Skaufast* took on 105,561 tons of coal from the No. 6 pier of Norfolk and Western Railway. The coal was to be transported to Japan by way of the Cape of Good Hope because the *Skaufast,* which is 855 feet long and about 113 feet wide, is too wide to pass through the Panama Canal.

The Cardinal Stone Company has opened a quarry in gneiss near Independence, Grayson County, for production of crushed stone.

The Salem Stone Corporation is opening a quarry in gneiss in Goochland County near Gum Spring, as a source of crushed stone to be used for construction of Interstate Highway 64.

Vulcan Materials Company, Mideast Division, is opening a quarry near Ferncliff, Louisa County. The rock will be used for crushed stone purposes. The company has also opened a quarry in limestone near Fishersville, Augusta County, to produce crushed stone primarily for use as road aggregate.

Two additional test wells, not reported in the May 1969 issue (vol. 15, no. 2) of *Virginia Minerals,* were drilled in Tazewell County in 1968. They are the Consolidation Coal Company No. 16 Pocahontas Fuel Company, drilled to a total depth of 4950 feet, and the Ray Brothers Corporation No. 2 Youngstown Mines Corporation, at a total depth of 5444 feet; both wells were dry holes. With the addition of these tests, there were a total of 7 wells drilled for oil and gas in Virginia during 1968, accounting for a total of 27,035 feet.

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VIRGINIA FIELD CONFERENCE

The first two-day fall field trip sponsored by the Geology Section of the Virginia Academy of Science will be held September 27-28, 1969. The purpose of these trips is to provide an opportunity for geologists and other interested persons to become acquainted with the various aspects of Virginia geology and to discuss geologic relationships in the field. It is anticipated that these field conferences will be held annually in different parts of the State.

The trip scheduled for this fall will feature the geology of sediments in the southeastern Coastal Plain of Virginia. Additional information may be obtained from Dr. B. K. Goodwin, Department of Geology, College of William and Mary, Williamsburg, VA 23185.

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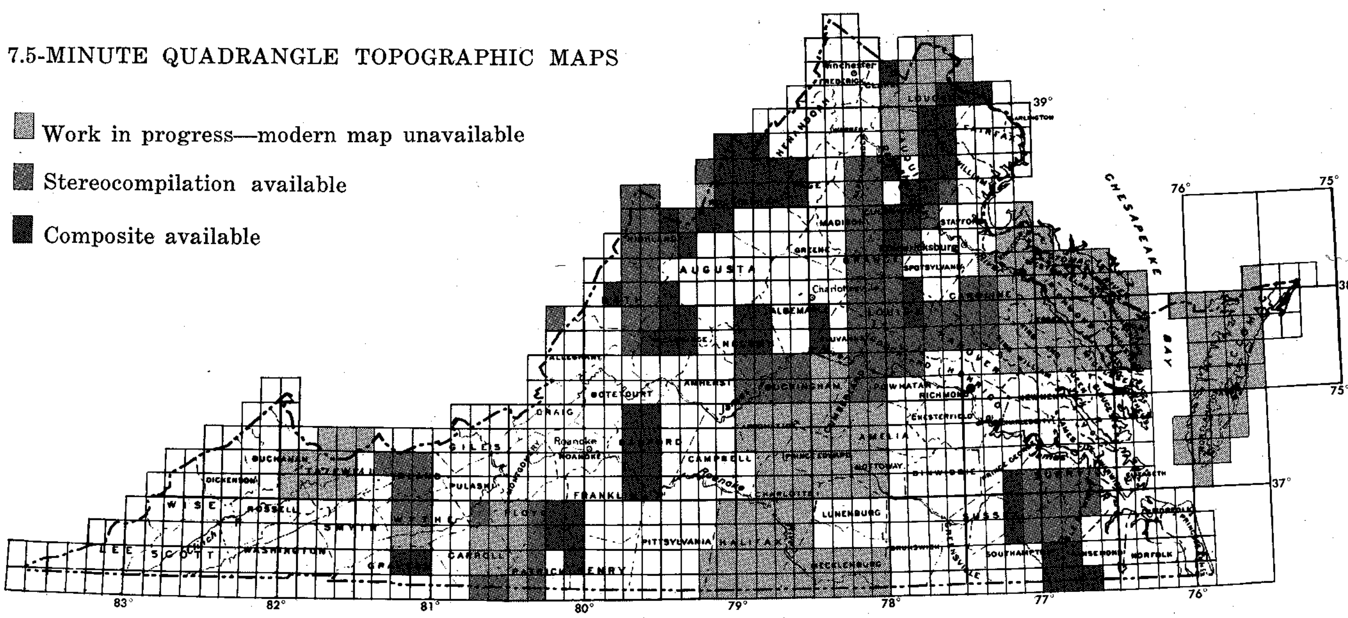
PROGRESS OF TOPOGRAPHIC MAPPING

The following statistical compilation and status maps indicate the progress of the modern 7.5-minute quadrangle topographic mapping program in Virginia through June 30, 1969.

	Number of 7.5-minute Quadrangles	*Percent of State*
Number of quadrangles	807	100
Mapping in progress	168	21
Preliminary maps available	163	20
Modern maps published	476	59
Total number of available maps	639	79

MODERN TOPOGRAPHIC MAPS IN PROGRESS



Shaded areas represent 7.5-minute quadrangles where topographic mapping was in progress as of June 30, 1969. Stereocompilations are advance maps that show topography, drainage, and buildings; they have no cultural names and have not been field checked. Composites are advance maps that show topography, drainage, buildings, and cultural names and have been field checked. Blue-line prints of advance maps are available at 50 cents each from the U.S. Geological Survey, Topographic Division, 1109 N. Highland St., Arlington, VA 22210.

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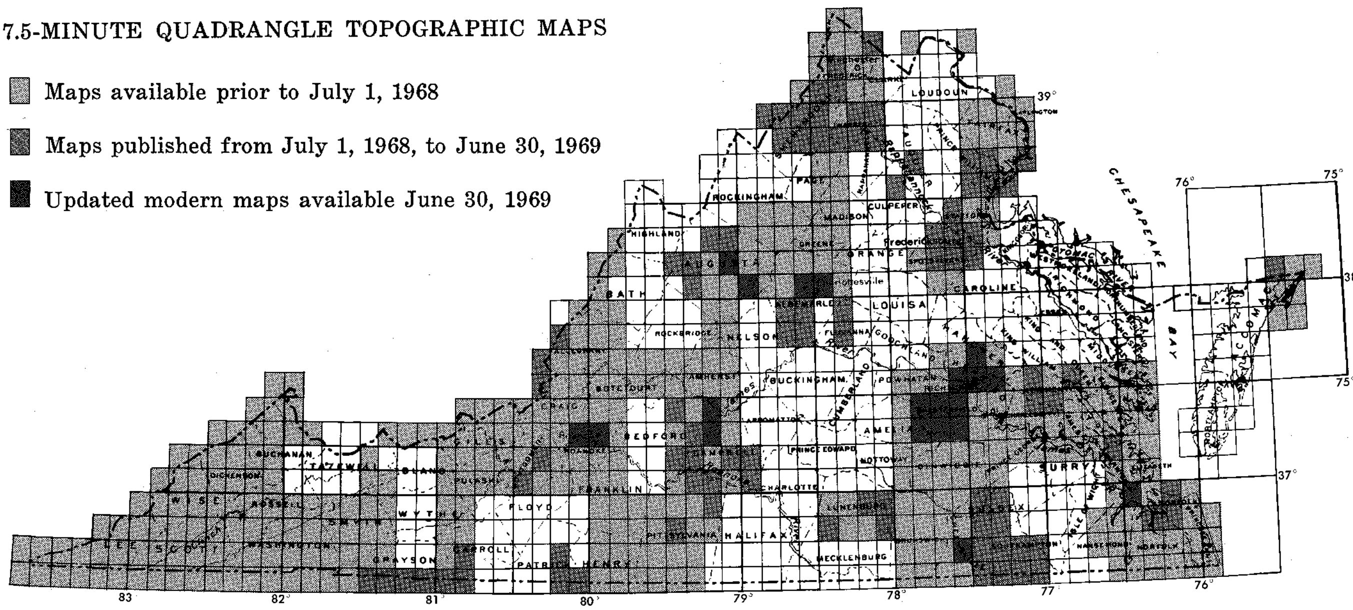
PUBLISHED MODERN TOPOGRAPHIC MAPS

7.5-MINUTE QUADRANGLE TOPOGRAPHIC MAPS

Maps available prior to July 1, 1968

Maps published from July 1, 1968, to June 30, 1969

Updated modern maps available June 30, 1969



Modern maps published from April 15, 1969, through June 30, 1969:

Augusta Springs
*Beach
*Bon Air
Boyd Tavern
Boykins
Brandy Station
*Charlottesville East
*Charlottesville West
*Chesterfield
*City Farm
*Clayville
Deerfield
Elliott Knob
*Emporia
Esmont
Forksville
Fredericksburg
Guinea
*Hallsboro
*Lynchburg
*Mannboro
Margarettsville
Mike
Mount Vernon
Nettleridge
*Newport News South
Palmyra
Parnassus
Patrick Springs
*Richmond
*Roanoke
*Salem
Schuyler
*Seven Pines
Spencer
*Staunton
Stony Creek
Sussex
Warrenton
*Waynesboro
*Winterpock
*Yellow Tavern

*Updated map

Shaded areas represent 7.5-minute quadrangles where maps that conform to modern topographic standards are available. Updated maps, on which recent cultural changes are indicated, are now available for certain areas of industrial, residential, or commercial growth. Cities and towns are being considered for revision updating each 5 to 10 years and rural areas, each 15 to 20 years. Published maps may be obtained at 50 cents each from the Virginia Division of Mineral Resources, Box 3667, Charlottesville, VA 22903. A State index to topographic maps is available free.